

REVISION OF NOTOTRICHIMUM SANDWICENSE (AMARANTHACEAE)  
HAWAIIAN PLANT STUDIES 87

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One of the numerous monographs of Hawaiian plants made in Chicago by Sherff (1951) was of the genus Nototrichium. His treatment of the rare N. humile Hbd., and N. viride is considered satisfactory. However, the third species, N. sandwicense (Gray ex Mann) Hbd., is common and abundant on all the large Hawaiian Islands. Sherff recognized twenty varieties of it, mostly restricted to single islands. This sort of distribution is common among the denizens of the rain forest at medium or high levels on the island mountains. It is not usual among the plants of the lower, dry scrub zone below the forests. In separating his numerous varieties Sherff laid much weight upon the size and shape of the leaf blades. Vigorous young and the lower branches have leaves several times the size of the terminal, fruiting branches. Sherff's key distinctions between blades that are elliptic to lanceolate, versus broader; and broadly ovate, versus moderately ovate, are not easily applied. The writer, long dissatisfied with Sherff's treatment, has now revised the species, and here present it as one species occurring on all seven large islands, and seven varieties, each found on a single island.

Key to Varieties

- A. Blades obtuse,
  - B. Petioles 1.5-3 cm long; blades chartaceous.
    - e. Maui. var. leptopodum.
  - B. Petioles 5-12 mm long; blades subcoriaceous.
    - Molokai. var. kolekolense.
- A. Blades acute,
  - C. Spikes 1.5-6 cm long,
    - D. Blades lanceolate; spikes 1.5-2.5 cm long.
      - Molokai. var. longespicatum.
    - D. Blades ovate to ovate lanceolate,
      - E. Sepals 2-2.5 mm long; blades 2-5 cm long; spikes 2-6 cm long.
        - Molokai. var. Forbesii.
      - E. Sepals 3-3.5 mm long; blades 5.7-15 cm long; spikes 2-6 cm long.
        - Niihau. var. niihauense.
  - C. Spikes 0.6-2 (-3) cm long,

F. Peduncles 5-7.5 cm long; blades lanceolate.

Kauai. var. olokeleanum.

F. Peduncles 6-30 mm long,

G. Blades obtuse, 1-3 cm long, elliptic.

Kauai. var. decipiens.

G. Blades acute, 1.5-11 cm long. Kauai, Oahu,  
Molokai, Maui, Lanai, Hawaii.

var. sandwicense.

#### Conspectus of Varieties

*Nototrichium sandwicense* (Gray ex Mann) Hbd., Fl.

Haw. Is. 373, 1888; Sherff, Bot. Leafl.

4: 4-8, 1951.

Ptilotus sandwicensis Gray ex Mann, Am. Acad.

Arts Sci., Proc. 7: 200, 1867.

Psilotum sandwicense Seem. ex Drake, Ill. Fl.

Ins. Mar. Pacif. 270, 1886.

N. sandwicense,

var. dubium Sherff, Bot. Leafl. 2: 2, 1950.

var. Helleri Sherff, Bot. Leafl. 1: 3, 1950.

var. kavaiense (Gray) Hbd., Fl. Haw. Is. 373,  
1888.

Ptilotus sandwicensis Gray, var. kavaiensis

Gray in Mann, Am. Acad. Arts. Sci., Proc.

7: 200, 1867.

var. lanaiensis Sherff, Bot. Leafl. 1: 3, 1950.

var. lanceolatum Sherff, Bot. Leafl. 1: 3, 1950.

var. latifolium Sherff, Bot. Leafl. 1: 3, 1950.

var. macrophyllum Sherff, Bot. Leafl. 1: 2, 1950.

var. mauiense Deg. & Sherff in Sherff, Bot.

Leafl. 2: 3, 1950.

var. pulchellum Sherff, Bot. Leafl. 2: 3, 1950.

var. pulchelloides Deg. & Sherff in Sherff,

Bot. Leafl. 3: 2, 1951.

var. subcordatum Deg. & Sherff in Sherff,

Bot. Leafl. 1: 3, 1950.

var. syringifolium Sherff, Bot. Leafl. 1: 2, 1950.

var. sandwicense

Lectotype: Iles Sandwich, Hawaii, 1851-1855,

J. Remy 207 (GH). Lectotype chosen by Sherff,

Bot. Leafl. 4: 7-8, 1951.

Distribution: Common on the drier lowlands of

Kauai, Oahu, Molokai, Maui, Lanai, and Hawaii.

var. decipiens Sherff, Bot. Leafl. 2: 2, 1950; 4:

17, 1951; Degener, Fl. Haw. 112: 3/15/56.

Holotype: Kauai, Kaholuamanu, 2,500 ft alt.,

Sept. 24, 1895, A. A. Heller 2,831 (US).  
Isotype (BISH, MO, NY).

Distribution: Kauai, Kaholuamanu to Waimea Canyon, Halemanu, and Napali Coast from Honolulu to Haena.

var. *Forbesii* Sherff, Bot. Leafl. 2: 2, 1950; 4: 9-10, 1951; Degener, Fl. Haw. 112: 3/15/56.

Holotype: Molokai, Mauna Loa, June 1912, C. N. Forbes 3.Mo. (NY). Isotypes (BISH, MO).

Forbes recorded this as a tree 10 ft high.

Distribution: Arid western Molokai. Besides the type collection, there was another in 1920 by Munro at Papohaku, on the west end of the island.

var. *kolekolense* Sherff, Bot. Leafl. 1: 3, 1950; Degener, Fl. Haw. 112: 3/15/56.

Holotype: Molokai, slopes of Puu Kolekole, July 1912, C. N. Forbes 179.Mo. (CHI).  
Isotypes (BISH, MO, NY).

Distribution: Known only from the type collection at Puu Kolekole, southeastern Molokai.

var. *leptopodium* Deg. & Sherff in Sherff, Bot. Leafl. 1: 2, 1950; 4: 15, 1951; Degener, Fl. Haw. 112: 3.15.56.

Holotype: Maui, Nakaohu, on aa lava waste, Dec. 23, 1948, O. Degener 19,341 (CHI).  
Isotype (BISH).

Distribution: Maui, Nakaohu, Kanoi, and Auwahi on arid southern slopes of Haleakala.

var. *longespdatum* Hbd., Fl. Haw. Is. 373, 1888; Sherff, Bot. Leafl. 4: 9, 1951; Degener, Fl. Haw. 112: 3/15/56.

Syntypes: West Maui; Molokai, Kalaupapa, W. Hillebrand (B). These were not seen by Sherff or by the writer, and they are now destroyed.

Neotype: Molokai: Settlement Trail (=Kalaupapa), June 1912, C. N. Forbes 43.Mo. (BISH), here designated. Isotypes (NY, US).

Distribution: Known from several localities in arid West Molokai, and from Wawaia in East Molokai.

Discussion: Hillebrand based his variety on two syntypes: West Maui, and Kalaupapa, Molokai. Both were destroyed in World War II, and had not been critically examined.

Sherff (1951: 9) chose as lectotype the unseen Hillebrand, West Maui (B). There are no known duplicates of this, and no subsequent collections from Maui. The plant is well known from Molokai. Consequently, Forbes 43.Mo. from Kalaupapa is here chosen as a neotype.

var. *niihauense* St. John, Pacif. Sci. 13: 166-168, fig. 9, 1959.

Holotype: Niihau, 1st valley w. of Kaali Cliff, 100 ft alt., Aug. 16, 1947, H. St. John 22,830 (BISH).

Distribution: Lower cliff slopes of Niihau.

var. *olokeleanum* Sherff, Bot. Leafl. 2: 3, 1950; 4: 12, 1951; Degener, Fl. Haw. 112: 3/15/56.

Holotype: Kauai, Olokele Canyon, Sept. 1909, J. F. Rock 5,422 (GH). Isotype (BISH), and 5,424 which is a duplicate.

Distribution: Known only from the lower Olokele Canyon collection by Rock in 1909, and by Degener in 1926.

#### Literature Cited

Sherff, Earl Edward, 1951. A revision of the Hawaiian Island genus *Nototrichium* Hillebr. (fam. Amaranthaceae). Bot. Leafl. 4: 2-21.